inst-bpm - Task #9611

Milestone # 9608 (New): Down Converter Test

ACNET devices for plotting DDC buffers

07/13/2015 04:28 PM - John Diamond

Status:	Closed	**Start date:**	07/13/2015
Priority:	Normal	**Due date:**	
Assignee:	John Diamond	**% Done:**	100%
Category:	bpmacsys	**Estimated time:**	8.00 hours
Target version:		**Spent time:**	13.00 hours

Description

ACNET devices that we can use to plot the DDC buffers at the end of the 0x20 cycle.

History

#1 - 07/13/2015 04:28 PM - John Diamond

- Tracker changed from Milestone to Task

#2 - 07/13/2015 04:28 PM - John Diamond

- Subject changed from ACNET devices for reading out DDC buffers to ACNET devices for plotting DDC buffers

#3 - 07/15/2015 01:29 PM - John Diamond

- % Done changed from 0 to 20

Verified that we can program a raw measurement and readout with the state machine then read it out with the ACNET raw data devices.
Had to fight a bit with the ees-buildroot environment in order to build bpmacsys on adlinuxdev for the first time.
Will now move on to implementing the DDC readout devices using the raw readout devices as a template.

#4 - 07/15/2015 04:12 PM - John Diamond

ACNET device descriptions: https://cdcvs.fnal.gov/redmine/projects/inst-bpm/wiki/Operations_Manual

#5 - 07/16/2015 04:05 PM - John Diamond

Implemented BPMDevice methods for returning the following turn-by-turn data attributes:

- Position (attribute 0x02)
- Magnitude (attribute 0x03)
- I data (attribute 0x04)

#6 - 07/16/2015 04:12 PM - John Diamond

- % Done changed from 20 to 60

#7 - 07/16/2015 08:57 PM - John Diamond

- % Done changed from 60 to 80

Created the following ACNET devices for testing the TBT data methods in BPMDevice:

- Z:HIABOO, Z:HIBBOO - Turn-by-turn I data
- Z:HMABOO, Z:HMBBPP - Turn-by-turn magnitude data
- Z:HPTBOO - Turn-by-turn position

#8 - 07/17/2015 10:01 AM - John Diamond

Was encountering divide-by-zero when requesting TBT data. Added the beam intensity threshold check to BPM::calculatePosition to fix this.

#9 - 07/17/2015 04:13 PM - John Diamond

Receiving bad offset/length errors when attempting to read more than 100 points from Z:HIABOO test device (TBT I data).

#10 - 07/21/2015 09:40 AM - John Diamond

- Status changed from New to Closed

- % Done changed from 80 to 100

Receiving bad offset/length errors when attempting to read more than 100 points from Z:HIABOO test device (TBT I data).

Forgot about the cdev configuration file (bbpmts.conf) that also includes a maximum length (was set to 101).

Set the TBT ACNET devices to the maximum length: 32764 (not sure why, but I can't use 32768).

#11 - 07/21/2015 09:42 AM - John Diamond

- Status changed from Closed to Assigned

Forgot that we need to make the offset work as a page number...

#12 - 07/21/2015 04:40 PM - John Diamond

- Status changed from Assigned to Feedback

- % Done changed from 100 to 90

Interpreting the offset as a page number won't work with Synoptic array plots. The Array widget will divide the request for 8000+ samples into four requests of 2048 or less. This assumes that the offset is a real array index and ultimately leads to a seg fault.

E-mailed Linden asking if we could change this behavior. Will find out from Charlie when his "big array" support in ACNET will be finished...

#13 - 07/21/2015 04:43 PM - John Diamond

- Status changed from Feedback to Resolved

- % Done changed from 90 to 100

Keeping the offset-as-a-page-index behavior in for now.
Marking this ticket as resolved and putting the Synoptic page ticket on hold until I hear from Linden.

#14 - 08/03/2015 03:14 PM - John Diamond

- Status changed from Resolved to Closed